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THE HUNGARIAN AND CHUKAR PARTRIDGES IN AMERICA

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For many years there has been considerable interest among American sportsmen in stocking coverts depleted of native game birds with well-known sporting varieties of foreign lands. Too many persons have made the common error of believing that distant pastures are greener than those at home--that foreign birds are better than native species. We believe that, as a general rule, returns will be more satisfactory if sportsmen and conservation agencies will give more consideration to the improvement of the environment and the conservation of native game than if they seek a solution by importation of foreign species. There are, of course, exceptional circumstances, and efforts should be made to establish the most desirable game, whether native or exotic, in unoccupied areas. To prevent loss and to maintain the maximum productivity of any area, liberations should first be made on an experimental basis and under the most competent direction.

Large importations of a number of kinds of game birds have been made in the United States, most of which were planted in the eastern States from Maine to Florida. The net result has been that of all the two score or more species, numbering hundreds of thousands of birds brought in, only three kinds can be considered as having become satisfactorily established as game birds anywhere. These three, the ring-necked pheasant, the Hungarian partridge, and the chukar partridge, have become established in certain areas in the United States and Canada, but it is significant that none of these areas is along the Atlantic seaboard, where the bulk of the introductions were made.

Many clubs, private individuals, and State officials have expressed a desire to introduce one or another of these birds into their section of the country. To supply up-to-date information on their status and to prevent loss of time,

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effort, and money, a survey of results of introductions in the various States was undertaken. This has been brought up-to-date by correspondence with States game officials as recent as 1946. To show the need for some basic information before making liberations, it may be mentioned that considerably more than a million dollars have already been spent in the introduction of the Hungarian partridge alone. Although some of the plantings have been successful, many more have ended in failure. Experience has shown that unless liberations are made in suitable regions, eventual complete loss is inevitable.

We should have learned certain generalized truths from the failures as well as from the successes in these large-scale importations. First and foremost we should have learned that we cannot expect to transplant birds successfully from one region to another unless we first determine that the climate and habitat conditions at the point of introduction are very similar to those of the native haunts of the species. By a long process of selective breeding, nature has produced varieties of birds which are preeminently adapted to certain sets of environmental conditions and only those conditions. The ring-necked pheasant, Hungarian partridge, and chukar partridge are the only species of foreign game birds that have been placed in sufficient numbers to overcome initial losses and to flourish in country sufficiently like their native environment. Even with these species undoubtedly there have been a great many more unsuccessful than successful attempts to find the places where they could succeed. Much time and expense could have been saved had the persons responsible for the introductions paid more attention to the natural features of the bird's ancestral home and made an effort to find similar situations in this country to make the introductions.

The successes which have been obtained by the three established exotic game birds came after a long period of trial and error in large-scale liberations. The ring-necked pheasant, which has become the most widespread and probably the most popular of our "naturalized" game birds, has received a great deal of study, and information is available in the "The Ring-necked Pheasant and Its Management in North America," edited by W. L. McAtee and published by the American Wildlife Institute. Therefore, only the chukar and Hungarian partridges are treated here.

We are indebted to the various State conservation departments for the major part of the information contained in this report. Supplementary data were obtained from members of the Fish and Wildlife Service and from its cooperators, and from both published and unpublished reports.

HUNGARIAN PARTRIDGE

Next to the ring-necked pheasant, the Hungarian or gray partridge (Perdix perdix) has been the most popular foreign game bird in this country. It has been extensively planted in the eastern United States ever since Richard Bache, son-in-law of Benjamin Franklin, released the first ones near Boverly, N. J., in the latter part of the eighteenth century. Releases have been made in all but a few of the States. Satisfactory or partial success seems to have been attained in 23 States and Canadian Provinces (table 1). While attempts to establish the species in the eastern United States have resulted in almost complete failures, in parts of the southern Canadian Prairie Provinces from Manitoba to British Columbia, where introductions were from stock obtained in

Hungary, a country climatically like our northern prairie region, the success of the "Hun" has been phenomenal. Open seasons have been allowed on them in those Provinces for some years, in Alberta since 1913. Saskatchewan and Manitoba have had daily bag limits of 15 birds. The report from Alberta, however, is that the species has developed the characteristic of having a 10-year cycle of abundance with peaks and depressions. The lowest point of the population cycle was reached in 1936, and apparently again in 1946. In attempts to establish Hungarian partridges in the United States the greatest success has been attained in the north-western and in the central-northern States from Ohio to Washington. Wisconsin reports that some 31,000 "Huns" were taken during the hunting season of 1938, an increase of 18,000 over the previous year. Most of the birds found in Illinois, Montana, and Idaho are said to be the descendants of migrant stock from surrounding regions. The birds seem partial to agricultural lands in prairie regions. Irrigated areas in many parts of the Northwest are apparently favorable. Oregon officials say that the bird has done well in the high, dry parts of the State. In the more eastern States successful colonizing appears to be restricted to agricultural lands and grasslands of the less humid region from western Ohio westward. From a study of the stocking results, no encouragement can be given for the establishment of the Hungarian partridge in the humid Atlantic Coastal and South-eastern States or in the arid and hot Southwest.

Many theories have been suggested for the success or failure of Hungarian partridges in certain areas, with predator abundance and soil and vegetative cover each being supported vigorously by their particular advocates. The accumulated evidence of actual success or failure to date seems to support the view that, as with most birds, climate and vegetative cover are the two most important limiting factors. Natural predation and soil types are minimized. Optimum conditions for a flourishing population of Hungarian partridges are a cool, moderately dry, climate and highly agriculturalized open country. These conditions are found in the grain belts of our Central Northern and Northwestern States and in the southern portions of the Prairie Provinces of Canada. Also there the "Hun" has done better than in all the other regions in which it has been liberated. Its reported success in Nova Scotia would seem to be evidence contradictory to this generalization. The climate there is humid, and the prevailing habitats are quite different from those of the prairie regions. Conditions under which the birds are living in Nova Scotia should be carefully studied and compared with conditions in other regions of the Atlantic seaboard in which repeated efforts to establish this partridge have resulted in dismal failure.

The habitat requirements of the Hungarian partridge seem to overlap those of the chukar only slightly, since the "Hun" is partial to highly agriculturalized crop land rather than to the rocky barren wastes of arid mountain regions. The Hungarian partridge seems admirably adapted to withstand severe cold and much snow. In habitat requirements it is certainly closer to the pheasant than the chukar.

Where the "Hun" occurs in sporting abundance it is regarded as a fine game bird and a most delectable fowl for the table. Furthermore, it has elicited few complaints from agricultural interests, despite the fact that its centers of abundance are in highly agriculturalized regions. Most State officials feel that competition with other game species is not a problem. In Illinois and Wisconsin, it is reported that the Hungarian partridges occur in areas heavily populated with ring-necked pheasants, yet no serious competition has been noticed. Because of the fact that, like the pheasant, it is adapted to regions of high human concentration, it will always be a more popular game bird than the chukar.

TABLE 1.—Results of Hungarian partridge liberations
in the United States and Canada

1. Birds breeding in the wild and largely successful in:

Alberta	North Dakota
British Columbia	Nova Scotia
California	Ohio (northwestern)
Idaho (western)	Oregon (eastern)
Indiana	Saskatchewan
Iowa	South Dakota
Manitoba	Washington (eastern)
Minnesota	Wisconsin
Nebraska	

2. Birds breeding and partly successful in:

Colorado	New York (western)
Illinois	Ontario (southern)
Michigan	Wyoming

3. Status uncertain in:

Arizona	Utah
Montana	

4. Unsuccessful in:

Alabama	New Jersey
Connecticut	New Mexico
Florida	North Carolina
Georgia	Oklahoma
Kentucky	Pennsylvania
Maine	Rhode Island
Maryland	South Carolina
Mississippi	Tennessee
Missouri	Texas
New Hampshire	West Virginia

5. No information from:

Arkansas	Massachusetts
Delaware	Vermont
Louisiana	

CHUKAR PARTRIDGE

The rock partridges (*Alectoris graeca*), of which the chukar is a race, are natives of the mountainous portions of Asia, southern Europe, and North Africa. The term "chukar" is commonly applied to only one of the many races of rock partridges--the Indian form, *A. graeca chukar*.

In 1893, W. O. Blaisdell, of Illinois, brought in 5 pairs of chukars from Karachi, India, and from this stock a few birds were liberated at Macomb, Ill., the following spring. One of these was shot at least 8 miles from that place, but no further report of this liberation is available. In 1920, at San Francisco, Calif., Frank E. Booth introduced some chukars direct from India. Phillips (1928) says that "in some old correspondence of Henry Oldys with Gustav Walter, of New York, mention is made of some trials with chukars in both Massachusetts and Nova Scotia." Whether the last-mentioned introductions antedate Blaisdell's attempt in 1893 is not known. There have been unconfirmed reports that Georgia and Maryland have introduced some rock partridges from Egypt.

For the past 16 years, and especially during the past 9 years, interest in the liberation of chukars has been steadily increasing. A Majority of the States have already made attempts to establish the species. Most of the liberations, however, are so recent that it seems unsafe to assume that the success of the birds is assured. Table 2 shows what has been done to date in the introduction of this species, and lists the States in which at least some success has been attained. So far it appears that the birds are making much the best progress in establishing themselves in the arid and mountainous western part of the country.

Officials of the California Fish and Game Commission report that the chukar seems to prefer the more arid southeastern parts of that State. There are definite records of successful introductions in Inyo and San Bernardino Counties made in the early nineteen forties. Inventories in 1945 and 1946 showed that the birds were doing well there. Extensive plantings in other parts of the State have met with failure.

Washington State officials released chukar partridges a number of years ago and have been much impressed with the success of reproduction. The species appears to be doing fairly well in a few of the arid sections of Okanogan, Douglas, Kittitas, and Yakima Counties. The last introductions were made in 1942, but in 1946 surveys in a number of areas in which a few birds were planted and some areas in which none had been released revealed flocks of 200 to 300 birds. In some cases the birds were as many as 20 miles from the point of release.

Wyoming reports that the chukar has been propagated more or less strenuously at the State Game Farm since 1937 and has become well established in the Bighorn Mountain region. Fish and Wildlife officials in Nevada reported several years ago that the chukar seemed to be fairly well established in at least 4 counties and that large flocks had been observed. The State game authorities of Nevada say that the bird has become widely established in the southcentral and western parts of that State and that it is reproducing and increasing in numbers.

Nebraska, up to the close of 1939, had liberated 4,000 chukars. The birds there appear to prefer low cover in the river valleys and are said to withstand deep snow very well. They have not done well, however, and although a few birds are still present, it is doubtful whether they will maintain themselves now that releases have ceased.

Minnesota conservation officials have stocked 50,000 chukars to date, nearly 12,000 of which were liberated in 1939. The game officers reported the 1938 and 1939 natural reproduction as being good, but at present (1946) the birds show no indication of having taken hold, and although some persist along the north shore of Lake Superior, hopes for them becoming established are low. Wisconsin had planted at least 3,845 of these partridges before 1940, and there has been much recent stocking, but there is as yet no conclusive evidence of establishment. Missouri has carried on extensive plantings of chukars and, fortunately, careful studies by Nagel (1945) have accompanied them. The conclusions are that this particular race of rock partridges is not suitable for the Missouri region. This observation is probably applicable to all regions east of the Great Plains.

An important factor to consider in the introduction of any exotic species into a new habitat is possible competition with native species. It was expected that at least in some instances severe competition would occur between chukars and various species of quail, particularly the several western species. All State game officials in reporting their experiences with the chukar, however, agree that no serious competition is evident. The territory occupied by the chukar in places where it has been successful, namely the more or less barren and wasteland sections, is reported to be largely devoid of any other game birds.

Habitat preferences of this species seem to be for dryer and more barren situations than those of almost any native North American game bird. Chukars have nested on the Mohave Desert, Calif., and one nest of eggs was hatched even in the middle of August in King's Canyon, concerning which the superintendent of the California State Game Farm says: "If there is any hotter, dryer place on the face of the earth in the month of August than this area, we do not know where it is." A representative of the Department of Game in the State of Washington reports that chukars have done well in extremely dry areas where they have steep rocky slopes for escape cover. In summer they gather in large flocks, staying close to waterholes.

Observations of a flock of birds released in Box Elder County, Utah, in the summer of 1936, seemingly contradictory to experiences in similar regions, disclosed a definite inability to endure winter conditions even with a generous supplementary feeding. Pheasants were abundant in the same area and did well without feeding. With the onset of severe winter conditions the 18 surviving chukars left the field and sought food and shelter at a ranch yard. Six of them failed to live through the winter, and the remainder disappeared the following summer.

No extensive study of the food habits of the chukar has been made, but in captivity these birds do well on diets fed to quail. Lespedeza, ragweed, sorghums, and grasshoppers are definitely known to have a high place on their food list. According to some reports, corn is not relished by either captive or wild birds. Game officials of Georgia, however, report that peanuts, cracked corn, pine mast, and peas are eaten. In California these birds are reported to eat small fruits and berries, leaves, green shoots and some kinds of roots, and insects and insect larvae. Chukars do much scratching and turning over of debris as they feed.

The chukar rock partridge in its native land in the Himalayas of northern India inhabits open grassland and is found in even the barest, most inhospitable country, keeping to rocky hillsides, ravines, and boulder-strewn plateaus. It also inhabits cultivated grasslands. It is found up to the snow line, working upwards in summer as the snow recedes to 14,000 to even 16,000 feet (Baker, "Fauna of British India").

In its new home in America, it appears that so far the chukar is doing best in the dryer climates of the mountainous West. In those regions it seems to take to the old stubblefields, open prairies, rocky barren slopes, or even deserts. The ultimate success of the species in this country is, of course, still in doubt, but it seems to have a chance of becoming permanently established in some of the Western States where arid mountainous conditions similar to those of its native home exist.

It is unfortunate that practically all importations of the rock partridge have been of the race A. g. chukar, because it is certain that the climatic and habitat requirements of some of the other 21 races are markedly different from those of the chukar.

TABLE 2.--Results of chukar partridge liberations
in the United States and Canada

1. Birds breeding in the wild and apparently succeeding in:

California	Washington
Nevada	

2. Birds breeding and partly successful in:

Colorado	Wyoming
Idaho	

3. States uncertain in:

Arizona	North Dakota
Indiana	Oklahoma
Iowa	Oregon
Maine	South Dakota
Maryland	Texas
Massachusetts	Utah
Nebraska	Wisconsin
New Mexico	

4. Unsuccessful in:

Alabama	New Hampshire
Alberta	New Jersey
British Columbia	New York
Florida	North Carolina
Georgia	Ohio
Illinois	Pennsylvania
Kansas	Rhode Island
Manitoba	Saskatchewan
Minnesota	Tennessee
Missouri	Virginia
Montana	West Virginia

5. No information from:

Arkansas	Michigan
Connecticut	Mississippi
Delaware	South Carolina
Kentucky	Vermont
Louisiana	

REFERENCES

BADE, AUGUST.

1937. The chukar partridge in California. Calif. Fish and Game 23: 233-236; also 2nd North Amer. Wildlife Conf. Trans., pp. 485-489.

BUMP, GARDINER.

1940. The introduction and transplantaion of game birds and mammals into the State of New York. 5th North Amer. Wildlife Conf. Trans., pp. 409-420.

COTTAM, CLARENCE; WILSON, ARNOLD L.; and SAYLOR, LAWRENCE W.

1940. The chukar and Hungarian partridges in America. U. S. Dept. Int., Bureau Biol. Surv. Wildlife Leaflet BS-159, 6 pp. April. (Processed).

DALE, FRED H.

1943. History and status of the Hungarian partridge in Michigan. Jour. Wildlife Managt. 7: 368-377.

ERRINGTON, P. L., and HAMERSTROM, F. N., Jr.

1938. Observations on the effect of a spring drought on reproduction in the Hungarian partridge. Condor 40: 71-73.

GERSTELL, RICHARD.

1940. The Hungarian and chukar partridges in Pennsylvania. 5th North Amer. Wildlife Conf. Trans., pp. 405-409.

GORDON, SETH.

1935. The Hungarian partridge: a complete record of the great game bird in America. Pennsylvania Game News 6: 20-22.

GRINWELL, JOSEPH.

1925. Dangers of Introduction. Science, No. 1590, pp. 621-623.

HAWKINS, A. S.

1937. Hungarian partridge nesting studies at Faville Grove. 2nd North Amer. Wildlife Conf. Trans., pp. 431-434.

HICKS, L. E.

1936. The food habits of the Hungarian partridge in Ohio. Ohio Dept. Agr., Div. Conserv., Bureau Sci. Res. Bull. 104. 7 pp. Columbus, Ohio.

KELSO, LEON.

1932. A note on the food of the Hungarian partridge. Auk 49: 204-207.

LAGBEHN, L. L.

1931. The Hungarian partridge in North America. Amer. Field 115 (1 and 2): 3-5; 46-48.

LEFFINGWELL, D. J.

1928. The Hungarian partridge in North America and the factors limiting its distribution. Northwest Sci. 2: 9-10.

LEGGE, LLEWELLYN.

1930. Stocking Hungarians. 17th Amer. Game Conf. Trans., pp. 165-174.

McATEE, W. L.

1929. Game birds suitable for naturalizing in the United States.
U. S. Dept. Agr. Circ. 96. 24 pp.

McCABE, R. A., and HAWKINS, A. S.

1946. The Hungarian partridge in Wisconsin. Amer. Mid. Nat. 36 (1): 1-75
July.

NAGEL, W. O.

1945. Adaptability of the chukar partridge to Missouri conditions. Jour.
Wildlife Mgmt. 9: 207-216.

PHILLIPS, J. C.

1928. Wild birds introduced or transplanted in North America. U. S.
Dept. Agr. Tech. Bull. 61, 63 pp.

ROTMAN, WILLIAM.

1935. Hungarian partridges are joining the grouse in their periodic
cycles of abundance and decline. Amer. Wildlife 24: 76.
September and October.

TRUE, G. H., Jr.

1937. The chukar partridge of Asia. Calif. Fish and Game 23: 229-231.

YEATTER, R. E.

1930a. The Hungarian partridge in the corn belt. 17th Amer. Game Conf.
Trans., pp. 247-251.

1930b. The Hungarian partridge in the Great Lakes region. Univ. Mich.
School Forestry and Conserv. Bull. 5: 1-92.

302

